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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,467	03/23/2004	John P. Archibald	2606-0006	1694

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DAVIDSON BERQUIST JACKSON & GOWDEY LLP  
4300 WILSON BLVD., 7TH FLOOR  
ARLINGTON, VA 22203

EXAMINER
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SUERETH, SARAH ELIZABETH

ART UNIT	PAPER NUMBER
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3749

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,467	<b>Applicant(s)</b> ARCHIBALD, JOHN P.	
	<b>Examiner</b> Sarah Suereth	<b>Art Unit</b> 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 32-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 45-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

During a telephone conversation with Mr. Peter Gowdy on April 17, 2006, a provisional election was made with traverse, and without further elaboration, to prosecute the invention of the solar collector with spring supports, claims 1-31 and 45-48. Affirmation of this election must be made by applicant in replying to this Office action. Claims 32-44 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claims 13, 14, 29, and 30, are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The adjustment of the tilt angle is critical or essential to the practice of the invention, but is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant discloses that coils of various sizes can be used, but using coils of different sizes only makes the apparatus taller, without adjusting the tilt angle.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 4-8, 10, 12, 16, 17, 20-24, 26, 28 and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaacson 4153037 in view of Christensen et al 5692491.

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Isaacson discloses a solar energy collector comprising a transparent (col. 1, line 40) top plate (14), a bottom (12) plate, and a series of fluid permeable supports (16) to space the top and bottom plates apart and to support the top plate (col. 2, lines 34, 35).

Regarding claims 8 and 24, Isaacson discloses two side closure members (20), located on the bottom plate (12), which form a fluid flow chamber to remove heat from the absorber and supports (col. 2, lines 60-63). This channel may be made of plastic (col. 1, line 41).

Regarding claims 12 and 28, the collector warms air (col. 1, line 59).

Regarding claim 17, the Isaacson device can withstand any load to the extent applicant's device does, as any load includes a load of zero.

Isaacson does not disclose a porous absorber material arranged alternately above and below said fluid permeable supports.

Christensen discloses a solar energy collector having a transpired absorber (col. 1, lines 1, 2) made out of fabric (col. 2, lines 30-33), used to warm incoming air (col. 1, line 19). Christensen teaches that this absorber may be stretched over various frames or supports to suit the application (col. 3, lines 1, 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isaacson invention with the absorber of Christensen in order to reduce the overall cost of the invention (Christensen, col. 2, line 33).

Regarding claims 6, 7, 22, 23, and 45-48, Isaacson does not disclose the support structure as claimed. However, applicant has not shown criticality for the claimed supports. The last paragraph on page 19 of the specification states that the support

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structure could have other forms as long as it is open to fluid flow, several of which are pictured in applicant's Figure 1C. The Isaacson structure is open to fluid flow, as there are open channels permitting air to freely circulate as pictured in Isaacson Figure 1.

The courts have held that it is within the skill of one in the art to alter the shape of an invention as a matter of design choice, absent evidence that a particular configuration is critical (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966), also MPEP 2144.04 Section B). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isaacson support structure to obtain the claimed shapes as a matter of obvious design choice.

Regarding claim 7, the courts have held that it is within the skill of one in the art to choose a material for its known properties. ((See *In re Leshin*, 125 USPQ 416. See also *Ballas Liquidating Co. v. Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331) also MPEP 2144.07). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isaacson support structure by making it out of a polymer material as a matter of obvious material choice.

7. Claims 9, 15, 25 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaacson in view of Christensen as applied to at least claims 1 and 16, above, and further in view of Rhodes et al 4205662.

8. Isaacson in view of Christensen does not disclose clips for attaching the plates to a surface.

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9. Rhodes discloses a solar collector with clips (56) attaching the plates to a support structure (46, also (col. 3, line 51)) in such a way to accommodate thermal expansion (col. 4, lines 66-68).

10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isaacson in view of Christensen invention with the clips of Rhodes in order to counteract the effects of thermal expansion (col. 4, lines 66-68).

11. Claims 2, 3, 11, 18, 19, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaacson in view of Christensen as applied to at least claims 1 and 16, as discussed above, and further in view of Whitman 4186721.

12. Isaacson in view of Christensen does not teach corrugating the surfaces of the plates.

13. Whitman discloses a solar collector. Whitman teaches that a corrugated heat collector provides maximum surface area and increased efficiency (col. 6, lines 32-35).

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isaacson in view of Christensen apparatus by corrugating the surfaces in order to increase the thermal efficiency (col. 6, lines 32-35).

15. Claims 13, 14, 29, and 30, are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaacson in view of Christensen as applied to at least claims 1 and 16, as discussed above, and further in view of Steigelmann 4446852.

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16. Isaacson in view of Christensen does not teach varying the heights of the support members in order to change the tilt angle.

17. Steigelmann discloses a solar collector. Steigelmann shows a support member (26) that is adjustable in height (col. 2, lines 28, 29).

18. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Isaacson in view of Christensen apparatus by making the Isaacson support members adjustable in height in order to increase the thermal efficiency by varying the angle of incidence of the solar radiation (col. 4, lines 12, 13).

### ***Conclusion***

19. The prior art made of record on the attached form PTO-892 and not relied upon is considered pertinent to applicant's disclosure.

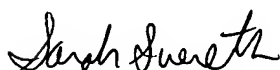
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Suereth whose telephone number is (571) 272-9061. The examiner can normally be reached on Monday to Thursday 7:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sarah Suereth  
Examiner  
Art Unit 3749

  
EHUD GARTENBERG  
SUPERVISORY PATENT EXAMINER